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EXAMINER	
MATTIS, JASON E	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/010,935	PRAGER ET AL.	
	Examiner	Art Unit	
	Jason E. Mattis	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-34,36-47,62 and 63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 6-34, 36-47, 62, and 63* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the amendment filed 5/23/07. Claims 1-4, 6-34, 36-47, 62, and 63 are currently pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 6, 9-16, 22, 33, 34, 36, 37, 42-45, and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Woodhead et al. (U.S. Pat. 6704579 B2).

With respect to claim 1, Woodhead et al. discloses a wireless communication system **(See the abstract of Woodhead et al. for reference to a system providing wireless broadband communication)**. Woodhead et al. also discloses a first subscriber subsystem disposed at a subscriber location having a first data interface compatible with a first general purpose protocol and a first digital interface compatible with a protocol other than the first general purpose protocol **(See column 8 lines 24-65 and Figure 3 of Woodhead et al. for reference to an indoor unit 122, which is a**

first subscriber subsystem, having an interface 150, which is a first subscriber data interface operating according to a general purpose backhaul connection protocol, and having an interface connecting to cable 129, which is a first digital interface, using a FSK digital communication protocol and for reference to the indoor unit 122 being part of a base station that inherently must be located at a subscriber location since subscribers must be within the base station's wireless range to be able to communicate wirelessly). Woodhead et al. further discloses a second subscriber subsystem disposed at a subscriber location having a second subscriber data interface compatible with a wireless protocol and a second digital interface coupled to the first digital interface to provide communication between the first subscriber data interface and the second subscriber data interface **(See column 9 lines 41-63 and Figure 4 of Woodhead et al. for reference to an outdoor unit 108, which is a second subscriber subsystem, having an antenna 270, which is part of a second subscriber data interface operating according to a wireless protocol, and having an interface connecting to cable 129, which is a second digital interface, with cable 129 coupling the first digital interface to the second digital interface, and for reference to the outdoor unit 108 being part of a base station that inherently must be located at a subscriber location since subscribers must be within the base station's wireless range to be able to communicate wirelessly).** Woodhead et al. also discloses that the first subsystem comprises an indoor unit subsystem and the second subsystem comprises an outdoor unit subsystem **(See column 8 lines 25-35, column 9 lines 42-52, and Figures 3 and 4 of Woodhead et**

al. for reference to indoor unit 122 being an indoor unit subsystem and for reference to outdoor unit 108 being an outdoor unit subsystem).

With respect to claim 6, Woodhead et al. discloses that the first subscriber subsystem provides only digital processing of the subscriber data **(See column 8 line 24 to column 9 line 40 and Figure 3 of Woodhead et al. for reference to all communication using cable 129 being done using a digital FSK format meaning all the analog processing of data is completed by the outdoor unit 108 before data is sent to indoor unit 122, which only provides digital processing of the data).**

With respect to claim 9, Woodhead et al. discloses that the first digital interface comprises a fiber optic interface **(See column 7 lines 7-20 of Woodhead et al. for reference to using fiber-optic cable links to connect devices of the system).**

With respect to claim 10, Woodhead et al. discloses that the second subscriber subsystem provides all analog processing of the subscriber data provided by the system **(See column 9 line 41 to column 10 line 67 and Figure 4 of Woodhead et al. for reference to the outdoor unit 108 providing all the radio frequency and analog processing of data before it is sent to the indoor unit 122 using digital cable 129).**

With respect to claim 11, Woodhead et al. discloses the second subsystem comprising a frequency converter for conversion between an intermediate frequency and a radio frequency **(See column 9 line 41 to column 10 line 67 and Figure 4 of Woodhead et al. for reference to the outdoor unit 108 having and RF up conversion block to convert between an intermediate frequency and a radio frequency).**

With respect to claim 12, Woodhead et al. discloses the second subsystem comprising at least one amplifier **(See column 10 lines 27-38 and Figure 4 of Woodhead et al. for reference to the outdoor unit 108 having power amplifier 268)**.

With respect to claim 13, Woodhead et al. discloses the second subsystem comprising a digital multiplexer **(See column 9 lines 53-63 and Figure 4 of Woodhead et al. for reference to the outdoor unit 108 having digital multiplexer 170)**.

With respect to claim 14, Woodhead et al. discloses that the second digital interface is a fiber optic interface **(See column 7 lines 7-20 of Woodhead et al. for reference to using fiber-optic cable links to connect devices of the system)**.

With respect to claim 15, Woodhead et al. discloses that the communication of subscriber data via the first and second digital interfaces is synchronous **(See column 9 lines 4-8 of Woodhead et al. for reference to using a reference signal 142 in order to maintain data synchronization between the indoor unit 122 and the outdoor unit 108)**.

With respect to claim 16, Woodhead et al. discloses adding synchronous overhead to subscriber data **(See column 9 lines 4-8 of Woodhead et al. for reference to using a reference signal 142, which is synchronous overhead, added to the data of cable 129)**.

With respect to claim 22, Woodhead et al. discloses a third subsystem with a third subscriber data interface compatible with the wireless protocol and a third digital interface coupled to the first digital interface to provide communication between the first and third subscriber interfaces **(See column 7 line 55 to column 8 line 23 and Figure**

2 of Woodhead et al. for reference to there being another outdoor unit 108b having the same structure as outdoor unit 108a meaning there is a subscriber data interface compatible with the wireless protocol and a third digital interface coupled to the first digital interface).

With respect to claim 33, Woodhead et al. discloses a method for providing wireless subscriber digital signal processing **(See the abstract of Woodhead et al. for reference to a method for providing wireless broadband communications).** Woodhead et al. also discloses providing a first signal processing subsystem at a subscriber location providing only digital signal processing with respect to the subscriber data signal **(See column 8 line 24 to column 9 line 40 and Figure 3 of Woodhead et al. for reference to an indoor unit 122, which is a first signal processing subsystem communicating with an outdoor unit 108 cable 129 via a digital FSK format meaning all the analog processing of data is completed by the outdoor unit 108 before data is sent to indoor unit 122, which only provides digital processing of the data and for reference to the indoor unit 122 being part of a base station that inherently must be located at a subscriber location since subscribers must be within the base station's wireless range to be able to communicate wirelessly).** Woodhead et al. further discloses providing a second signal processing subscriber subsystem at a subscriber location providing analog and digital signal processing with respect to the subscriber data signal **(See column 9 line 41 to column 10 line 67 and Figure 4 of Woodhead et al. for reference to an outdoor unit 108, which is a second signal processing subsystem, providing all**

the radio frequency and analog processing of data before the data is converted into a digital format and is sent to the indoor unit 122 using digital cable 129 and for reference to the outdoor unit 108 being part of a base station that inherently must be located at a subscriber location since subscribers must be within the base station's wireless range to be able to communicate wirelessly). Woodhead et al. also discloses coupling the first and second subsystems using a digital link **(See column 8 lines 36-46 of Woodhead et al. for reference to coupling the indoor unit 122 and the outdoor unit 108 using cable 129, which is a digital link).** Woodhead et al. further discloses that the first subsystem comprises an indoor unit subsystem and the second subsystem comprises an outdoor unit subsystem **(See column 8 lines 25-35, column 9 lines 42-52, and Figures 3 and 4 of Woodhead et al. for reference to indoor unit 122 being an indoor unit subsystem and for reference to outdoor unit 108 being an outdoor unit subsystem).**

With respect to claim 34, Woodhead et al. discloses that the digital link is a fiber optic link **(See column 7 lines 7-20 of Woodhead et al. for reference to using fiber-optic cable links to connect devices of the system).**

With respect to claim 36, Woodhead et al. discloses coupling the first subsystem to a subscriber data backbone **(See column 9 line 9-19 and Figure 3 of Woodhead et al. for reference to coupling the indoor unit 122 to a backbone through an input/output port 150).**

With respect to claim 37, Woodhead et al. discloses that the backbone comprises the Internet **(See column 1 lines 16-24 for reference to using the Internet to couple connect devices for communication)**.

With respect to claim 42, Woodhead et al. discloses coupling the second subsystem to a wireless subscriber data communication channel **(See column 9 lines 41-63 and Figure 4 of Woodhead et al. for reference to outdoor unit 108 coupling to wireless communication channels through antenna 270)**.

With respect to claim 43, Woodhead et al. discloses providing a third subsystem providing analog and digital signal processing and coupling the first and third systems using the digital link **(See column 7 line 55 to column 8 line 23 and Figure 2 of Woodhead et al. for reference to there being another outdoor unit 108b having the same structure as outdoor unit 108a meaning there is a subscriber data interface compatible with the wireless protocol and a third digital interface coupled to the first digital interface)**.

With respect to claim 44, Woodhead et al. discloses coupling the first and third subsystem using another digital link **(See column 7 line 55 to column 8 line 23 and Figure 2 of Woodhead et al. for reference coupling the outdoor unit 108b to the indoor unit 1122 using another digital link 129)**.

With respect to claim 45, Woodhead et al. discloses that the another digital link is a fiber optic link **(See column 7 lines 7-20 of Woodhead et al. for reference to using fiber-optic cable links to connect devices of the system)**.

With respect to claim 47, Woodhead et al. discloses communicating a synchronous signal via the digital link to enable media access control to be provided by the first subsystem with respect to a physical link utilized by the second subsystem **(See column 9 lines 4-8 of Woodhead et al. for reference to using a reference signal 142 in order to maintain data synchronization between the indoor unit 122 and the outdoor unit 108)**.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhead et al. in view of Van Lieshout et al. (U.S. Publication US 2004/0203714 A1).

With respect to claims 2 and 38, Woodhead et al. does not disclose using a protocol selected from the group of T1, T3, E1, E3, OC-1, OC-3, OC-12, and ISDN.

With respect to claims 2 and 38, Van Lieshout et al., in the field of communications, discloses using ISDN **(See page 1 paragraph 8 of Van Lieshout et al. for reference to using ISDN protocol in a backhaul connection to another**

network). Using ISDN protocol has the advantage of allowing the users of the wireless network to communicate with users of an IDSN network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Van Lieshout et al., to combine using ISDN, as suggested by Van Lieshout et al., with the system and method of Woodhead et al., with the motivation being to allow the users of the wireless network to communicate with users of an IDSN network.

6. Claims 3 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhead et al. in view of Eyuboglu et al. (U.S. Publication US 2002/0196749 A1).

With respect to claims 3 and 39, Woodhead et al. does not disclose using Ethernet protocol.

With respect to claims 3 and 39, Eyuboglu et al., in the field of communications, discloses using Ethernet protocol **(See page 1 paragraph 5 of Eyuboglu et al. for reference to using Ethernet protocol in a backhaul connection to another network)**. Using Ethernet protocol has the advantage of allowing the users of the wireless network to communicate with users of an Ethernet network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Eyuboglu et al., to combine using Ethernet, as suggested by Eyuboglu et al., with the system and method of Woodhead et al., with the motivation being to allow the users of the wireless network to communicate with users of an Ethernet network.

7. Claims 4 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhead et al. in view of Marin et al. (U.S. Publication US 2002/0174441 A1).

With respect to claims 4 and 40, Woodhead et al. does not disclose using SONET protocol, which is a synchronous signal protocol.

With respect to claims 4 and 40, Marin et al. discloses using SONET protocol **(See page 2 paragraph 25 and Figure 2 of Marin et al. for reference to using SONET protocol in a backhaul connection)**. Using SONET protocol has the advantage of allowing the users of the wireless network to communicate with users of a SONET network.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Marin et al., to combine using SONET protocol, as suggested by Marin et al., with the system and method of Woodhead et al., with the motivation being to allow the users of the wireless network to communicate with users of a SONET network.

8. Claims 7, 8, 62, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhead et al. in view of Dapper et al. (U.S. Pat. 6275990 B1).

With respect to claims 7, 8, 62, and 63, Woodhead et al. does not disclose using an OFDM digital modem and a digital multiplexer to process signals.

With respect to claims 7, 8, 62, and 63, Dapper et al., in the field of communications, discloses using an OFDM digital modem and a digital multiplexer to

process signals **(See column 78 line 51 to column 80 line 10 and Figure 37 of Dapper et al. for reference to using a digital OFDM modem and a digital multiplexer to process signals)**. Using an OFDM digital modem and a digital multiplexer to process signals has the advantage of allowing a system to process and route OFDM signals on multiple channels such that bandwidth is used more efficiently.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Dapper et al., to combine using an OFDM digital modem and a digital multiplexer to process signals, as suggested by Dapper et al., with the system and method of Woodhead et al., with the motivation being to allow a system to process and route OFDM signals on multiple channels such that bandwidth is used more efficiently.

9. Claims 17-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhead et al. in view of Cam et al. (U.S. Publication US 2002/0126704 A1).

With respect to claims 17-20, Woodhead et al. does not disclose using SONET, which is a synchronous communication protocol, with training and timing overhead bits added.

With respect to claims 17-20, Cam et al., in the field of communications, discloses using SONET, which is a synchronous communication protocol, with training and timing overhead bits added **(See page 1 paragraph 10 and page 2 paragraph 16 of Cam et al. for reference to using SONET protocol with training and timing overhead bit patterns)**. Using SONET protocol with training and timing overhead bit

patterns has the advantage of using a well-known protocol to communicate quickly and efficiently communicate information in a fiber optic link.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Cam et al., to combine using SONET protocol with training and timing overhead bit patterns, as suggested by Cam et al., with the system and method of Woodhead et al., with the motivation being to use a well-known protocol to communicate quickly and efficiently communicate information in a fiber optic link.

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhead et al. in view of Cam et al. and in further view of Barsheshet (U.S. Publication US 2003/0043738 A1).

With respect to claim 21, the combination of Woodhead et al. and Cam et al. does not disclose using resilient packet ring access protocol.

With respect to claim 21, Barsheshet, in the field of communications, discloses using resilient packet ring access protocol **(See page 1 paragraph 4 for reference to using resilient packet ring access protocol)**. Using resilient packet ring access protocol has the advantage of using a high-speed efficient packet communication protocol.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Barsheshet, to combine using resilient packet ring access protocol, as suggested by Barsheshet, with the system and method

of Woodhead et al. and Cam et al., with the motivation being to use a high-speed efficient packet communication protocol.

11. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhead et al. in view of Schilling (U.S. Publication US 2003/0161386 A1).

With respect to claim 23, the Woodhead et al. does not disclose that the third subsystem is connected to the first subsystem through the same link that connects the first subsystem and the second subsystem.

With respect to claim 23, Schilling discloses subsystems linked together in a daisy chain **(See page 3 paragraphs 36-40 and Figure 2 of Schilling for reference to base stations and a controller linked together in a daisy-chain)**. Using subsystems linked together in a daisy chain has the advantage of allowing the amount of fiber used to connected the system to be reduced since all subsystems do not need to connect to a central subsystem directly.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Schilling, to combine using subsystems linked together in a daisy chain, as suggested by Schilling, with the system and method of Woodhead et al., with the motivation being to allow the amount of fiber used to connected the system to be reduced since all subsystems do not need to connect to a central subsystem directly.

With respect to claims 24 and 25, Woodhead et al. discloses multiple subsystems connected directly to a multi-port device the first subsystem **(See column 7**

line 55 to column 8 line 23 and Figure 2 of Woodhead et al. for reference multiple outdoor units 108 connected to indoor unit 122 through multiple ports).

With respect to claims 26 and 27, although Woodhead et al. and Schilling do not specifically disclose using multi-port data routers and multi-port data switches, these devices are old and well known in the art of communications. Using multi-port data router and multi-port data switches has the advantage of allowing multiple data links to be connected from one device to many other devices using the same network interface. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine using multi-port data router and multi-port data switches with the system and method of Woodhead et al. and Schilling, with the motivation being to allow multiple data links to be connected from one device to many other devices using the same network interface.

12. Claims 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhead et al.

With respect to claims 28-31, although Woodhead et al. does not specifically disclose using multi-port data routing and multi-port data switching, these functionalities are old and well known in the art of communications. Using multi-port data routing and multi-port data switching has the advantage of allowing multiple data links to be connected from one device to many other devices using the same network interface.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine using multi-port data routing and multi-port data switching with the

system and method of Woodhead et al., with the motivation being to allow multiple data links to be connected from one device to many other devices using the same network interface.

With respect to claim 32, although Woodhead et al. does not specifically disclose providing broadband interfaces, providing broadband interfaces for a wireless network as well as a wired backhaul network is old an well known in the art of communications. Providing broadband interfaces for a wireless network as well as a wired backhaul network has the advantage of providing high-speed data services to users of the system.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine providing broadband interfaces for a wireless network as well as a wired backhaul network with the system and method of Woodhead et al., with the motivation being to provide high-speed data services to users of the system.

13. Claims 41 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodhead et al. in view of Barsheshet.

With respect to claims 41 and 46, Woodhead et al. does not disclose using resilient packet ring access protocol.

With respect to claims 41 and 46, Barsheshet, in the field of communications, discloses using resilient packet ring access protocol **(See page 1 paragraph 4 for reference to using resilient packet ring access protocol)**. Using resilient packet ring

access protocol has the advantage of using a high-speed efficient packet communication protocol.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Barsheshet, to combine using resilient packet ring access protocol, as suggested by Barsheshet, with the system and method of Woodhead et al., with the motivation being to use a high-speed efficient packet communication protocol.

Response to Arguments

14. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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